

·000 on October 3, and +·040 on November 27), and the results substituted in the formula

$$h = h_0 + aa,$$

the values for the constants h_0 and a determined by the method of least squares are

(a) for all observations $h_0 = 0.967$, $a = .0300$, mean error of $h \pm .095$

(b) Nos. 10-25 $h_0 = 0.916$, $a = .0313$, mean error of $h \pm .064$
while Müller's values are $h_0 = 0.877$, $a = .0436$.

As before stated, the second set of values for h_0 and a are probably much more reliable than the first set.

It appears then from the observations that the spheroid of Saturn shows a change of brightness with phase, and the change in magnitude can be well represented by the formula

$$h = 0.877 + .0436a$$

already obtained by Müller from his long series of observations.

Astrophysical Observatory, Potsdam:
1908 Jan. 24.

Reappearance of Saturn's Ring, January 1908.

By R. T. A. Innes.

The following observations of the ghost-ring and of the re-appearance of the ring were made here with the 9-inch refractor.

1907 Dec. 25. Ghost-ring seen on both sides, but more distinct on *f.* side. Shadow of ring quite its own breadth N. of equator and very black—no longer brown.

Dec. 28. Ring-like extension very faint, is more distinct on *f.* side—is to S. of shadow.

Dec. 29 and 30. Ghost-ring still visible.

Dec. 31. Just glimpsed (ghost-ring)—4 satellites seen close to Saturn.

1908 Jan. 3. Ghost-ring invisible—Mimas or Enceladus at *p.* elongation.

Jan. 4. No ghost-ring seen.

Jan. 5. No trace of ring-system—one satellite about 4" and another about 10" *f.* Saturn—the nearer of these would be half way along the ring had the latter been visible.

Jan. 6. 5^h 30^m to 6^h 5^m G.M.T. Ring shadow appreciably narrower—no trace of ring.

Jan. 7. 6^h 20^m G.M.T. Bad definition through passing thunderclouds. No trace of ring—two satellites, much closer in than Titan, seen closely *f.* Ring shadow narrow.

Jan. 8. 5^h 35^m G.M.T. (daylight). Ring visible—it is very fine, and not unlike the ghost-ring of a month ago. From my recollection of the disappearance in October 1907, the ring looks as though it had reappeared about six hours earlier. The ring is brighter *f.* the planet—this was verified by using the erecting eye-

piece referred to in a previous communication, when, had the appearance been subjective, there would have been no reversal. Observation was continued until it clouded over at 6^h 15^m G.M.T. Three satellites *p.* and Titan *f.*

On the same date, at about 6^h G.M.T., Mr. H. E. Wood, M.Sc., made the following note:—"Ring seen distinctly as a sharp well-defined line on either side of the disc. I consider that it was brighter on the *f.* side. I did not see any points of increased brightness in the trace of the ring."

Jan. 9. Ring brighter—*f.* part decidedly thicker than *p.* part.

Jan. 11. *f.* part of ring is the thicker, but with the erecting eyepiece this is not so certain.

Johannesburg:
1908 January 13.

Note on the discovery of a Moving Object near Jupiter
(1908 C J).

(Communicated by P. H. Cowell, F.R.S., for the Astronomer Royal.)

Whilst examining a photograph of Jupiter's satellites VI and VII, taken on 1908 February 28 with the 30-inch reflector, a faint object was noticed by Mr. Melotte not far from the sixth satellite.

Photographs taken previously were then examined, and the object was identified and traced back as far as January 27. In all there are eight photographs taken on eight nights. The object is slightly brighter than J. VII, and its motion relatively to Jupiter during the month over which the observations extend is +70^s·58 in R.A. and +11' 39''·2 in Decl. At present the material available is insufficient to show conclusively whether it is a new satellite or a minor planet.

Provisional positions were obtained by referring the image on each plate to two stars chosen from the *Astronomische Gesellschaft* Catalogue.

More accurate places will be determined in the course of the reduction of the photographs of J. VI and VII.

Observations of Moving Object near Jupiter.

Date and G.M.T.			Apparent R.A.	Apparent Dec.	Exposure.	Object—Jupiter.	
						R.A.	Dec.
1908.	d	h m	h m s			m s	
Jan. 27	12	44	8 45 51·78	+18° 5' 3"·2	64 min.	-0 8·32	-43' 15"·8
Feb. 1	11	52	43 20·49	17 35·7	111 min.	+0 2·01	41 41·7
	3	10 27	42 21·99	22 25·2	80 min.	6·47	41 4·7
	22	10 57	33 35·48	19 5 48·9	100 min.	48·45	33 59·0
	23	8 34	33 14·23	7 36·6	42 min.	50·56	33 36·7
	24	12 25	32 47·26	9 51·2	80 min.	53·04	33 9·3
	27	10 59	31 42·99	15 17·9	70 min.	1 0·04	31 59·8
	28	11 29	31 21·67	17 5·3	80 min.	+1 2·26	-31 36·6